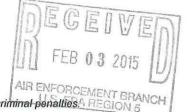
### MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT AIR QUALITY DIVISION

## REPORT CERTIFICATION



Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties. A REGION 5

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating Permit (ROP) program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Natural Resources and Environment, Air Quality Division upon request.

Source Name Marathon Petroleum Company LP	County Wayne
Source Address 1300 South Fort Street	City _ Detroit
AQD Source ID (SRN) A9831 ROP No. MI-ROP-A9831- 2012b	ROP Section No. 01
Please check the appropriate box(es):	
☐ Annual Compliance Certification (Pursuant to Rule 213(4)(c))	2
Reporting period (provide inclusive dates): From	d(s) used to determine compliance is/are the s and conditions contained in the ROP, each for the deviations identified on the enclosed
□ Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3))  Reporting period (provide inclusive dates): From	ng requirements in the ROP were met and no requirements in the ROP were met and no EPT for the deviations identified on the
I certify that, based on information and belief formed after reasonable inquiry, the stat supporting enclosures are true, accurate and complete  Honor F. Sheard  Name of Responsible Official (print or type)  MPC Investment LLC, its General Partner Deputy Assistant Secretary  Title	sements and information in this report and the  313-297-6248 Phone Number
Signature of Responsible Official	1 29 15 Date



### Marathon Petroleum Company LP

### VIA ELECTRONIC COPY AND FEDERAL EXPRESS

1300 South Fort Street Detroit, MI 48217 Tel: 313.843.9100

January 30, 2015

Chief, Environmental Enforcement Section Environmental and Natural Resources Section U.S. Department of Justice ENRD Mailroom, Room 2121 601 D. Street, NW Washington, DC 20530

Director, Air Enforcement Division Office of Civil Enforcement U.S. Environmental Protection Agency Mail Code 2242-A 1200 Pennsylvania Avenue, N. W. Washington, DC 20460

Air and Radiation Division EPA Region 5 77 W. Jackson Blvd. (AE – 17J) Chicago, IL 60604 Attn: Compliance Tracker

RE: Submittal of Flare Consent Decree Semi-Annual Report- 2nd Half 2014

**EPA Officials:** 

Marathon Petroleum Company, LP (MPC) Michigan Refining Division (MRD) would like to submit the "Semi-Annual Report" as required by the Flare Consent Decree between US EPA and MPC.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

For further discussion of these plans or questions, please contact Robert Jones at (313) 297-6186.

Sincerely,

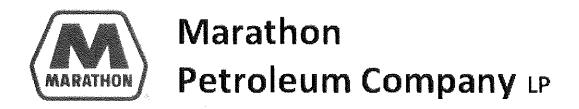
Marathon Petroleum Company LP

By: MPC Investment LLC, General Partner

Mrs. Honor F. Sheard, Deputy Assistant Secretary

CC:

James Wilkins, MPC Ruth Cade, MPC Virginia King, MPC



# Flare Consent Decree Semi-Annual Report

**Michigan Refining Division** 

**Detroit Refinery** 

January 30, 2015

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# SECTION 1 INTRODUCTION

In accordance with the Reporting Requirements (Section VIII) of the Consent Decree (CD) that was entered on August 30, 2012 between Marathon Petroleum Company, L.P. (MPC) and the United States of America on behalf of the Environmental Protection Agency (EPA), MPC submits the following semi-annual report. Paragraph 72 of the CD requires the submittal of a progress report semi-annually on January 31 and July 31 beginning 30 days after the end of the first semi-annual period after the Date of Entry until termination of the CD. This report contains information for the period beginning on July 1, 2014 and ending on December 31, 2014.

This semi-annual report addresses the requirements of the CD that were applicable during the reporting period. The CD requirements that are not yet applicable are not included in this report.

The Detroit Refinery operates 5 flares, all of which are "Covered Flares" subject to the flare requirements in the CD, except in cases where noted otherwise. The refinery operates the following flares: Cracking Plant, Crude, Unifiner, Alkylation, and Coker.

The contents of this semi-annual report are as follows:

- Section 2: Progress report and description of problem areas with respect to meeting the requirements of Section V of the CD;
- Section 3: Description of the status of the Mitigation Project;
- Section 4: Discussion of monitoring equipment/instrument downtime, Automatic Control System overrides, and emission standard exceedances; and
- Section 5: Annual emissions data for the prior calendar year

### **SECTION 2**

### COMPLIANCE REQUIREMENTS PROGRESS REPORT

### 2.1 Instrument and Monitoring Systems

### CD Paragraph 16 - Flare Data and Monitoring Systems and Protocol Report

In accordance with the requirements of CD Paragraph 16, a Flare Data and Monitoring Systems and Protocol Report was submitted for each of the following flares at the Detroit Refinery by the required date as specified in Column B of Appendix 2.1. The submittal date for each flare is listed below:

Cracking Plant Flare: April 30, 2010

Crude Flare: October 29, 2010

Unifiner Flare: October 29, 2010

• Alkylation Flare: October 29, 2010

• Coker Flare: December 31, 2012

Each report contained the following required information:

- The information, diagrams, and drawings specified in CD Paragraphs 1-8 of Appendix 1.8;
- A detailed description of each instrument and piece of monitoring equipment, including the specific model and manufacturer, that the Detroit Refinery has installed or will install in compliance with CD Paragraphs 18-23 of this CD (Paragraph 9 of Appendix 1.8);
- A narrative description of the monitoring methods and calculations that the Detroit Refinery shall use to comply with the requirements of CD Paragraphs 46-48 (Paragraph 10 of Appendix 1.8); and
- The identification of the calibration gases to be used to comply with Subparagraph V.B.1 of Appendix 1.10 (Paragraph 11 of Appendix 1.8).

#### CD Paragraphs 17 -23 – Installation and Operation of Monitoring Systems

In accordance with the requirements of CD Paragraph 17, except as specified below, the Detroit Refinery installed and commenced the operation of the instrumentation, controls, and monitoring systems detailed in CD Paragraphs 18-23 for each flare at the refinery by the required date as specified in Column C of Appendix 2.1. The compliance date for each flare is listed below.

• Cracking Plant Flare: September 30, 2012

• Crude Flare: September 30, 2012

• Unifiner Flare: September 30, 2012

• Alkylation Flare: September 30, 2012

• Coker Flare: June 30, 2013

The refinery did not incur any problems regarding compliance with the requirements for each of these monitoring systems for the flares listed above.

### CD Paragraph 24 - Video Camera

In accordance with PTI Permit 63-08C, the Detroit Refinery installed color video monitors with date and time stamps on all Covered Flares to monitor for visible emissions on November 1, 2012.

### <u>CD Paragraph 25 – Instrumentation and Monitoring Systems: Optional Equipment for any Covered Flare</u>

In accordance with the option allowed in CD Paragraph 25, the Detroit Refinery has chosen to install instrumentation to continuously measure and calculate flow of all pilot gas to the Coker flare as part of the calculation of the net heating value of the combustion zone (NHV<sub>cz</sub>).

### CD Paragraph 26 - Instrumentation and Monitoring Systems: Specifications

In accordance with the requirements of CD Paragraph 26, except as noted in individual paragraphs below, the Detroit Refinery has installed each instrumentation and monitoring system identified in CD Paragraphs 18-20 and 22-23 for each flare according to the specifications set forth in Appendix 1.10. The following paragraphs detail the specifications for each instrument and/or monitoring system.

### Specifications for Vent Gas Flow Monitoring System (CD Paragraph 18)

The Detroit Refinery completed the installation of the GE DigitalFlow™ GM868 at each flare at the refinery by the required date (see discussion regarding CD Paragraph 17). Per the manufacturer's specifications and MPC's operational and Quality Assurance/Quality Control (QA/QC) procedures, the installation, operation, and calibration of the vent gas flow monitoring system meets or exceeds the specifications listed in Appendix 1.10 of the CD for a vent gas flow meter.

### Specifications for Vent Gas Average Molecular Weight Analyzer (CD Paragraph 19)

As specifically allowed by Appendix 1.10, the GM868 vent gas flow meter that is installed at each flare at the refinery is equipped with a vent gas average molecular weight analyzer. Furthermore, per the manufacturer's specifications, the GM868 meets or exceeds the specifications listed in Appendix 1.10 of the CD for the vent gas average molecular weight analyzer. Therefore, by installation of the GM868, the Detroit Refinery meets or exceeds the specifications listed in Appendix 1.10 for the vent gas average molecular weight analyzer.

### Specifications for Total Steam Flow Monitoring System (CD Paragraphs 20 & 21)

The Detroit Refinery completed installation of the GE DigitalFlow<sup>TM</sup> GS868 at each steam-assisted flare at the refinery by the required date (see discussion regarding CD Paragraph 17). Per the manufacturer's specifications and MPC's operational and QA/QC procedures, the installation, operation, and calibration of the total steam flow monitoring system meets or exceeds the specifications listed in Appendix 1.10 of the CD for a steam flow meter.

### Specifications for Gas Chromatograph (GC) (CD Paragraph 22)

The Detroit Refinery completed installation of the Siemens MAXUM<sup>TM</sup> Edition II at each refinery flare by the required date (see discussion regarding CD Paragraph 17). Per the manufacturer's specifications and MPC's operational and QA/QC procedures, the installation, operation, and calibration of the MAXUM<sup>TM</sup> Edition II meets or exceeds the specifications listed in Appendix 1.10 of the CD for a gas chromatograph.

### Specifications for Meteorological Station (MET Station) (CD Paragraph 23)

The Detroit Refinery completed the installation of the Young Ultrasonic Anemometer Model 85004 by the required date (see discussion regarding CD Paragraph 17). Per the manufacturer's specifications and MPC's QA/QC procedures, the MET station meets or exceeds the specifications listed in Appendix 1.10 of the CD for a meteorological station.

# <u>CD Paragraph 27 – Instrumentation and Monitoring Systems: Recording and Averaging Times</u>

In accordance with the requirements of CD Paragraphs 27 and 55.a, except as noted below, the Detroit Refinery calculated and recorded data measurements and calculations for each parameter in accordance with the time intervals specified in CD Paragraph 27 by the required date, which is three months following the date listed in the discussion regarding CD Paragraph 17. The refinery has properly integrated each monitoring system into the Distributed Control System (DCS) and developed programming within the DCS to ensure that each parameter is recorded and averaged according to the specifications of this CD Paragraph.

### CD Paragraph 28 - Operation and Maintenance

In accordance with the requirements of CD Paragraph 28, the Detroit Refinery operated each of the instruments and monitoring systems required in CD Paragraphs 18-20 and 22-23 on a continuous basis except for the following periods during this reporting period:

- (1) Malfunction of an instrument;
- (2) Maintenance following instrument malfunction;
- (3) Scheduled maintenance of an instrument in accordance with the manufacturer's recommended schedule:
- (4) QA/QC activities;
- (5) When the Covered Flare that the instrument or monitoring system is associated with is not in service.

In accordance with the requirements of CD Subparagraph 55.b, a record of the following information is kept for each instrument that exceeds 110 hours of downtime in any calendar quarter:

- Duration,
- Explanation of the cause(s) of the deviation, and
- Description of the corrective action(s) taken.

#### 2.2 Waste Gas Minimization

### CD Paragraph 30 - Initial Waste Gas Minimization Plan (WGMP)

In accordance with the requirements of CD Paragraph 30, the Detroit Refinery has submitted the Initial Waste Gas Minimization Plan (WGMP) for the Cracking Plant, Crude, Unifiner, Alkylation, and Coker flares by the required date, as specified in Column D of Appendix 2.1. The compliance date for each flare is listed below:

- Cracking Plant Flare: July 31, 2012
- Crude Flare: July 31, 2012
- Unifiner Flare: July 31, 2012
- Alkylation Flare: July 31, 2012
- Coker Flare: July 31, 2014

The Initial WGMP contains the following required information:

- Updates, if and as necessary, to the information, diagrams, and drawings provided in the Flare Data and Monitoring Systems and Protocol Report;
- Waste Gas Characterization and Mapping;
- Reduction previously realized;

- Planned reductions;
- Taking a Covered Flare Out of Service; and
- Prevention Measures

### CD Paragraph 31 - First Updated Waste Gas Minimization Plan

The Detroit Refinery submitted its first update to the Waste Gas Minimization Plan by the deadline for all flares, except the Coker Flare, on July 31, 2013. This update covered the 12-month period following the period covered by the first WGMP. This updated WGMP included updates to Waste Gas Characterization and Mapping, Previously Realized Reductions, and Planned Reductions, as well as a review of any potential Root Cause Analysis reports. The Initial WGMP for the Coker Flare was submitted by the deadline of July 31, 2014, and the First Updated WGMP for the Coker Flare will be due on July 31, 2015.

### CD Paragraph 32 - Subsequent Updates to Waste Gas Minimization Plan

In accordance with the requirements of CD Paragraph 32, submissions of subsequent updates to the WGMP are included in each mid-year semi-annual report. An updated WGMP is due every July with the semi-annual report until the termination of the CD. Since this is not a mid-year submittal, an updated WGMP is not included in this report.

# <u>CD Paragraphs 33 & 34 – Waste Gas Minimization Plan: Implementation and Enforceability</u>

In accordance with the requirements of CD Paragraph 33, except as noted below, the Detroit Refinery has implemented and will implement the actions described in the WGMP no later than the dates set forth in the WGMP. If no implementation date and/or no completion date for actions that do not require ongoing implementation are set forth in the WGMP, the implementation and/or completion date shall be deemed the date of the submission of the WGMP. The following table describes the schedule for implementation of specific actions detailed in the WGMP. The refinery does not anticipate a problem with the implementation schedule for each specific action detailed in the WGMP.

Table 2-1
WGMP Planned Reductions

Flare	Equipment	Project	Completion Date/Status
Cracking Plant	C3/C4 Splitter Bottoms Cooler PSV	Fix leaking relief valve 11PSV7946	12/31/2013- Complete
Cracking Plant	Propane Vaporizer	Upgrade Propane Vaporizer controls/indication to DCS operated from local (CSR project). Note: Reduction is once per 5 year TAR cycle.	3/31/2015- Scheduled to be completed during 2015 TAR.

Flare	Equipment	Project	Completion Date/Status
Cracking Plant	CCR Debutanizer (14PSV8202)	Repair leaking relief valve 14PSV8202	10/31/2015
Cracking Plant	Depentanizer Overhead Receiver (16PSV8420)	Repair leaking relief valve 14PSV8420	12/31/2015
Crude	Fuel Gas KO Drum 4V4	Minimize the need to purge the Fuel Gas KO Drum to Flare	12/31/2014- Complete. Policies are in place to ensure KO drum is drained to flare only when necessary to remove liquid.
Crude	Crude Unit Sample Stations (Preflash, Debutanizer, Fuel Gas) and other Misc. items.	Install a Closed Loop Sample Station for the Debutanizer Overhead Liquid	12/31/2014- Complete. The current sample station was determined to be a closed loop sample station.
Unifiner	8V5 Hot Flash Drum Relief Valve 08PSV6819	Repair leaking relief valve	12/31/2013- Complete
Unifiner	8V5 Hot Flash Drum Relief Valve 08PSV6820	Repair leaking relief valve	12/31/2013- Complete
Unifiner	8V9 Low Pressure Flash Drum Relief Valve 08PSV6821	Repair leaking relief valve	12/31/2013- Complete
Unifiner	8V11 Stripper Overhead Receiver Relief Valve 08PSV6826	Repair leaking relief valve	12/31/2013- Complete
Unifiner	Rich Amine Flash Drum PSV Bypass Isolation Valve	Replace leaking isolation valve	12/31/2018- Scheduled to be completed during 2018 TAR.
Unifiner	Hot Flash Drum PSV Inlet Isolation Valve	Replace leaking isolation valve	12/31/2018- Scheduled to be completed during 2018 TAR.
Unifiner	LPG Railcar	Improve procedure to reduce venting during LPG loading	12/31/2014- Complete. Procedure minimizes venting to flare during LPG railcar loading.
Alkylation	09PSV7599 Bypass	Replace leaking bypass valve	12/31/2018- Scheduled to be completed during 2018 TAR.
Alkylation	09PSV7514 Bypass	Replace leaking bypass valve	12/31/2018- Scheduled to be completed during 2018 TAR.

The refinery is taking specific steps to ensure that compliance is met by the specified date.

In accordance with the requirements of CD Paragraph 34, the refinery acknowledges and accepts that the specific actions in the WGMP are enforceable by the EPA.

### CD Paragraph 35 - Root Cause Analysis for Reportable Flaring Incident

In accordance with the requirements of CD Subparagraph 35.a, the Detroit Refinery will conduct an investigation into the Root Cause(s) of each Reportable Flaring Incident by no later than forty-five days following the end of an Incident. Each internal report to document the Incident and the root cause analysis will include, at a minimum, the following:

- Date and time that the Incident started and ended;
- Volume of waste gas flared and quantity of Sulfur Dioxide (SO<sub>2</sub>) and volatile organic compounds (VOCs) released, including the calculations that were used to determine that quantity;
- The steps, if any, that the refinery took to limit the duration of the Incident and the quantity of VOC and/or SO<sub>2</sub> emissions associated with the Incident;
- A detailed analysis that sets forth the root cause and all contributing causes of the Incident;
- An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Incident resulting from the same root cause or contributing causes in the future;
- If investigations and/or possible corrective actions are still underway 45 days after the Incident, a statement of the anticipated date by which a follow-up report fully conforming to the requirements will be completed.

The refinery does not anticipate any problems conducting and reporting Root Cause Analysis for each Reportable Flaring Incident. Pursuant to CD Paragraph 38, the Detroit Refinery followed the provisions of MPC's PRI Consent Decree for any Acid gas or Hydrocarbon Flaring Incident that occurred during the reporting period. Flare CD Reportable Flaring Events not covered by the PRI Consent Decree are listed below:

- 10/15/2014 FCCU Shutdown, Flue Gas Slide Valve Failure- Exceeded 500,000 SCF Waste Gas in 24-hour period
  - Incident Duration: 15.5 hours
  - o SO2 released: 432 lbs
  - o VOC released: 308 lbs
  - o Root Causes:

- 1. Fieldbus spec SP-70-24 required replacement of analog converters to fieldbus, not anticipating the consequences of fieldbus failures in critical services.
- 2. Digital FB converter failures in critical services were not known/considered when decision to convert from analog to field bus converters was made.
- 3. Default tuning parameters used during CSR conversion are slow responding, which can be a problem for valves that need to be responding fast.
- 4. Compressor suction EIV valve cannot be PMed, only stroked during start up.

### Completed Corrective Actions:

1. Update fieldbus spec SP-70-24 to remove signal converters from critical services. Critical Services are defined as Segment Level Rationalization Risk no. 1 and no. 2.

### o Outstanding Corrective Actions:

- 1. Complete Complex 3 operator training refresher on surge controller Wet Gas Compressor Operation and surge protection. Include CAT 2, INC-137737 details.
- 2. Evaluate, define, engineer, and implement a way to keep wet gas compressor forward flow during feed diversion. Improve availability of 35 MW gas feed for wet gas compressor start-up.
- 3. Modify Start Up operating Procedure for 12C9 Wet Gas Compressor, ROP-03-12-131-DT to include EIV stroking to verify operation.
- 4. Execute replacement of all FB signal converters identified for replacement (risk 1, risk 2) segments and environmentally regulated instrumentation by next TAR or nearest shutdown opportunity.
- 5. Establish a review of tuning parameters, in services that are not normally operated in control, to identify whether the default tuning parameters used during CSR cutover are appropriate.
- 6. Identify and establish a replacement list and schedule for FB signal converters with hardwired signals to the DCS on risk 1 and 2 segments and environmentally regulated instrumentation.

### CD Paragraph 37 - Corrective Action Implementation

In accordance with the requirements of CD Paragraph 37, the Detroit Refinery will take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the root cause and all contributing causes of the Reportable Flaring Incident.

The refinery does not anticipate any problems regarding the implementation of the identified corrective actions within the appropriate timeframe.

#### CD Paragraphs 39 & 40 - Limitations on Flaring

In accordance with the requirements of CD Paragraphs 39 and 40, the limitations on flaring are not yet applicable to the Detroit Refinery. Following the date by which the refinery will be subject to the flaring limitations of CD Paragraph 39, the appropriate Semi-Annual Report will contain a status update regarding the compliance with those flaring limitations.

### 2.3 Flare Combustion Efficiency

## CD Paragraph 41 – Emission Standards and Work Practices Applicable to each Covered Flare upon the Date of Lodging

In accordance with the requirements of CD Paragraph 41, the Detroit Refinery has maintained compliance with the standards detailed in the paragraphs below, beginning on the Date of Lodging (April 5, 2012), as specified in this CD Paragraph. Deviations from this requirement are reported in the Title V semi-annual deviation report.

- CD Subparagraph 41.a each flare was operated at all times when emissions may have been vented to it.
- CD Subparagraph 41.b each flare is designed to operate with no Visible Emissions except for periods of startup, shutdown, and/or malfunction.
- CD Subparagraph 41.c each flare was operated with a flame present at all times.
- CD Subparagraph 41.d the refinery has complied with all applicable Subparts of 40 C.F.R. Parts 60, 61 or 63 that state how a particular flare must be monitored.
- CD Subparagraph 41.e the refinery has implemented good air pollution control practices to minimize emissions from each flare.

In accordance with the requirements of CD Subparagraph 55.d, a record of the following information is kept for each deviation from the above standards:

- Duration of deviation,
- Explanation of the cause(s) of the deviation, and
- Description of corrective action(s) taken.

### CD Paragraph 42 – Exit Velocity

In accordance with the requirements of CD Paragraph 42, the Detroit Refinery commenced the operation of the Cracking Plant, Crude, Unifiner, Alkylation, and Coker flares according

to the specified exit velocity, except for periods of startup, shutdown, and/or malfunction by the required date, as specified in Column C of Appendix 2.1. Deviations from this requirement are reported in the Title V semi-annual deviation report. The compliance date for each flare is listed below:

• Cracking Plant Flare: September 30, 2012

Crude Flare: September 30, 2012

• Unifiner Flare: September 30, 2012

Alkylation Flare: September 30, 2012

• Coker Flare: June 30, 2013

### CD Paragraphs 43 & 44 - Work Practice Standards for each Covered Flare

In accordance with the requirements of CD Paragraph 43, the Detroit Refinery installed and commenced operation of an Automatic Control System (ACS) that automates control of the supplemental gas flow rate and the total steam volumetric flow rate to the respective flare for the Cracking Plant, Crude, Unifiner, Alkylation, and Coker flares by the required date as specified in Column G of Appendix 2.1. The compliance date for each flare is listed below:

Cracking Plant Flare: October 30, 2012

Crude Flare: October 30, 2012

Unifiner Flare: October 30, 2012

Alkylation Flare: October 30, 2012

Coker Flare: July 31, 2013

However, as allowed by CD Paragraph 44, the refinery may manually override the operation of the ACS for one of the following reasons:

- Malfunction of an instrument required to operate the ACS;
- Maintenance following malfunction of an instrument required to operate the ACS;
- Scheduled maintenance of an instrument required to operate the ACS in accordance with the manufacturer's recommended schedule;
- QA/QC activities on an instrument required to operate the ACS;
- Startup, Shutdown, or Malfunction of a process unit that is connected to the flare header;
- To stop smoke emissions that are occurring;
- To meet the Net Heating Value requirements;
- To prevent extinguishing the Flare;
- To protect personnel safety; and/or
- To stop Discontinuous Wake Dominated Flow.

In accordance with the requirements of CD Subparagraph 55.c, a record of the following information is kept for each time that the ACS was manually overridden:

- Date;
- Time:
- Duration;
- Reason for the override; and
- Corrective action(s) taken.

### CD Paragraph 45 - Operation According to Design

In accordance with the requirements of CD Paragraph 45, the Detroit Refinery operates and maintains each flare in accordance with its design, except if, and only to the extent that, operation and maintenance of the flare in conformance with its design conflicts with compliance with one or more of the requirements of this CD.

### CD Paragraph 46.a - Vent Gas Net Heating Value Standards for each Covered Flare

In accordance with the requirements of CD Subparagraph 46.a, the Detroit Refinery has operated each flare with a Net Heating Value of Vent Gas (NHV $_{vg}$ ) of greater than or equal to 300 British thermal units per standard cubic foot (Btu/scf), except during periods of maintenance and QA/QC activities. Deviations from this requirement are reported in the Title V semi-annual deviation report.

In accordance with the requirements of CD Subparagraph 55.d, a record of the following information is kept for each deviation from the standard of this CD Paragraph:

- Duration of deviation;
- Explanation of the cause(s) of the deviation; and
- Description of corrective action(s) taken.

### <u>CD Paragraph 46.b - Combustion Zone Net Heating Value Standards for each Covered Flare</u>

The requirements of CD Subparagraph 46.b became applicable to the four existing flares June 30, 2013. In accordance with the requirements of CD Subparagraph 46.b, the Detroit Refinery has operated with a Combustion Zone Net Heating Value (NHV<sub>cz</sub>) greater than the calculated Combustion Zone Net Heating Value Limit (NHV<sub>cz-limit</sub>), except during periods of maintenance and QA/QC activities, and those periods outlined in Section 4 of this report. The Coker Flare became subject to Subparagraph 46.b on June 30, 2014.

# <u>CD Paragraph 47 - S/VGmass and S/VGvol (Total-Steam-Volumetric-Flow-Rate-to-Vent-Gas-Volumetric-Flow-Rate Ratio Standards)</u>

In accordance with the requirements of CD Subparagraph 47.a, the Detroit Refinery has used best efforts to operate each existing flare (the Coker Flare became subject on June 30, 2014) so as to minimize the S/VG<sub>mass</sub> and/or S/VG<sub>vol</sub> at each flare, except for the following scenarios:

- Stop Smoke Emissions that are occurring;
- Meet the Net Heating Value requirements;
- Prevent extinguishing the Flare;
- Protect personnel safety; and/or
- If only pilot gas and/or purge gas is being vented to the flare

The following scenarios are also exempted from the requirements to minimize S/VG, provided that the scenarios do not exceed 110 hours in any calendar quarter for any instrument:

- Malfunction of an instrument used to minimize S/VG;
- Maintenance following malfunction of an instrument used to minimize S/VG;
- Scheduled maintenance of an instrument used to minimize S/VG in accordance with the manufacturer's recommended schedule; and/or
- QA/QC activities on an instrument needed to meet the requirements.

### CD Paragraph 48 - Minimum Momentum Flux Ratio (MFR)

In accordance with the requirements of CD Subparagraph 48.b, the Detroit Refinery has identified in this semi-annual report which Momentum Flux Ratio (MFR) compliance option is selected for each of its flares. The refinery can change the selected option only after notifying EPA in a semi-annual report that it intends to make the change no less than 30 days after submission of the report. In the report, a reason for changing the compliance option shall be included. The following list identifies the option selected for each flare.

- The Detroit Refinery has chosen to maintain a minimum of MFR of 0.0030 on a 60-minute rolling average basis, rolled every 5 minutes for the Cracking Plant, Unifiner, and Alkylation flares. The Coker Flare became applicable to the 0.0030 MFR limit on June 30, 2014.
- The Detroit Refinery has chosen to maintain a proposed flare-specific MFR of 0.0005 for the Crude flare. It has been demonstrated that a discontinuous wake dominated flow or measured combustion efficiency less than 98% will not occur for this flare-specific MFR.

#### CD Paragraph 49 – 98% Combustion Efficiency

In accordance with the requirements of CD Paragraph 49, the Detroit Refinery has operated each of its four existing flares with a Combustion Efficiency of greater than 98%, except during periods outlined in Section 4.4 of this report. The requirements of CD Subparagraph 49 became applicable to the Coker Flare on June 30, 2014.

#### 2.4 Miscellaneous

### CD Paragraph 56 - Temporary-Use Flares

The Detroit Refinery has not used any Temporary-Use Flares during the period covered under this Semi-Annual Report.

### 2.5 NSPS Subpart A, J, and Ja Applicability

### CD Paragraph 58 - NSPS Subparts A and J

As set forth in CD Paragraph 58, the Detroit Refinery flares must comply with 40 C.F.R. Part 60 Subparts A and J by the date set forth in Column J of Appendix 2.1, which date is June 30, 2016.

### CD Paragraph 59 - NSPS Subparts A and Ja

As set forth in CD Paragraph 59, the Detroit Refinery flares must comply with 40 C.F.R. Part 60 Subparts A and Ja by the date in Column J of Appendix 2.1 (June 30, 2016), or the date by which a modified flare must comply with the requirements of Subpart Ja, whichever is later. On and after the date in which a flare is subject to Subpart Ja, Subpart J no longer is applicable to that flare.

### 2.6 Incorporation of CD Requirements into Requirements into Federally Enforceable Permits

### CD Paragraph 60 - Permits Needed to Meet Compliance Obligations

The Detroit Refinery has not needed to obtain any federal, state, or local permits or approvals in order to meet any compliance obligations under Section V of the CD.

### <u>CD Paragraph 61 – Permits to Ensure Survival of CD Limits and Standards after Termination of CD</u>

The Detroit Refinery has obtained a non-Title V permit in order that the limits and standards imposed in CD Paragraph 61.b will survive the termination of the CD. The permit to install (PTI) number is 85-13 and was issued by the Michigan Department of Environmental Quality (MDEQ) on September 11, 2013.

### CD Paragraph 62 – Modifications to Title V Operating Permits

In September 2013, the Detroit Refinery submitted the necessary forms to MDEQ to include PTI 85-13 into its Title V permit. MDEQ has not yet responded to this submittal.

# SECTION 3 ENVIRONMENTAL MITIGATION PROJECT

In accordance with Section VII of the CD, the Detroit Refinery was required to implement and commence operation of the Environmental Mitigation described for the purpose of VOC and benzene emissions reduction by September 30, 2013.

CD Paragraph 66 states that MPC shall install controls that conform to the requirements of the Benzene Waste Operations NESHAP (BWON), 40 C.F.R. Part 61, Subpart FF, on the Detroit Refinery's sludge handling facility that, as previously configured, is depicted as the "Existing System" in Appendix 2.6 of the CD.

The following is a list of initial actions performed to comply with the CD. Each project was completed by July 12, 2013. Any subsequent deviations from these requirements will be noted in this report and Benzene-waste accounted for as required.

### Sump Pit and Pump Adjacent to Tank 29-T12

The Detroit Refinery has removed the sludge pit and installed a vacuum truck transfer station, including strainers which are hard-piped to Tank 29-T12. The new system has no openings to the atmosphere.

### Tank 29-T12

The Detroit Refinery has completed all necessary modifications to Tank 29-T12 to make it conform to the requirements of 40 C.F.R. § 61.343, and the Detroit Refinery hereafter operate and maintain Tank 29-T12 in conformance with 40 C.F.R. § 61.343. Note that, although not during the reporting period covered by this report, there was an 18 day period during the first half of 2014 when the 29-T12 vapors were not routed to a control device. This was due to a communication error and was corrected promptly when identified. During this period 29-T12 was considered "uncontrolled" and the Benzene-waste was counted toward the 6 Mg limit.

### Centrifuges 1 and 2

The Detroit Refinery has removed one of the centrifuges so that only one centrifuge remains, and has replaced the existing mix tanks with new tanks that are designed, installed, operated, and maintained to conform with 40 C.F.R. § 61.343. The Centrifuge 1 is comprised of a mix tank and a centrifuge mounted on top of a screw conveyor. The Detroit Refinery has completed all necessary modifications to the centrifuge with screw conveyor to make it conform to 40 C.F.R. § 61.343 and shall hereafter operate and maintain the centrifuge with screw conveyor in conformance with 40 C.F.R. § 61.343.

### Container for Centrifuge Solids

The Detroit Refinery replaced the previously uncontrolled, three-sided box for centrifuge solids with a container that is designed, installed, operated and maintained in conformance with 40 C.F.R. § 61.345. However, this container is currently unable to be controlled due to the moisture content in the system. The Benzene-waste from the centrifuge solids container is being counted toward the 6Mg limit. MRD is currently working to address this issue.

### Frac Tank

The Detroit Refinery will no longer use the Frac Tank from the previous system. Instead, separate tanks for oil and water are utilized which conform to the requirements of 40 C.F.R. § 61.343. The Detroit Refinery shall hereafter operate and maintain the new tanks in conformance with 40 C.F.R. § 61.343.

#### Conveying Material between the Waste Management Units

All areas for conveyance of materials between the strainers and the Roll-Off Box are hard-piped with no openings to the atmosphere.

#### Closed Vent System and Control Device

The Detroit Refinery has eliminated emissions to the atmosphere from Tank 29-T12, the new centrifuge mixing tanks, the existing centrifuge and screw conveyor, the new container that handles centrifuged solids, and the previously utilized Frac Tank by designing, installing, operating and maintaining a closed vent system in conformance with 40 C.F.R. § 61.349(a)(1). The Detroit Refinery routes all vapors from this closed vent system to a control device that is designed, installed, operated, and maintained in conformance with 40 C.F.R. § 61.349(a)(2). The closed vent system and control device conform to all requirements of 40 C.F.R. § 61.349.

#### Modifications to Original Design

The following list details changes to the modifications described and depicted on the second schematic in Appendix 2.6 of the CD.

- A second controlled centrifuge was brought on-site. It receives contents from two mix tanks, and meets the requirements for control outlined in the Flare CD.
- The Frac Tank was replaced by separate tanks for oil and water.

An updated diagram of the sludge handling facility is shown in the attached:

#### Description of Problems Encountered (Subparagraph 68.b.)

No problems were encountered during the completion of this Project.

### Description of the Environmental and Public Health Benefits (Subparagraph 68.c.)

As a result of the Environmental mitigation project, an estimated reduction in benzene emissions of 0.413 Mg/yr was achieved based on a comparison of 2012-2013 BWON data.

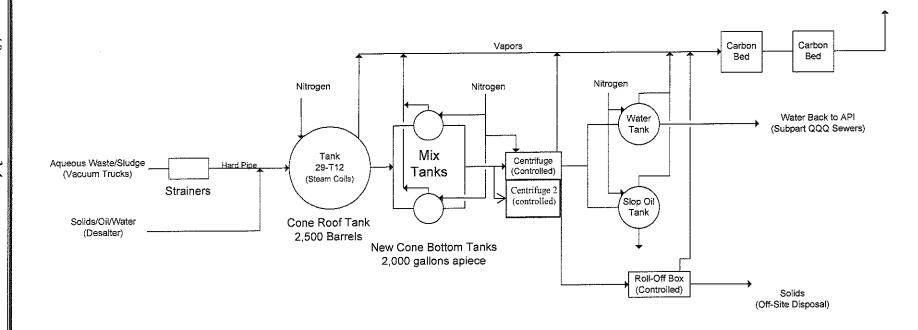
### Certification that the Project Has Been Fully Implemented (Subparagraph 68.d.)

I certify under penalty of law that this information describing the full implementation of the Mitigation Project was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Marathon Petroleum Company LP

By: MPC Investment LLC, General Partner

Honor F. Sheard, Deputy Assistant Secretary



### **SECTION 4**

### FLARE INSTRUMENTATION AND CONTROL SYSTEMS

### 4.1 Monitoring Instrument/Equipment Downtime

In accordance with the requirements of CD Subparagraph 70.a, Table 4-1 through Table 4-5 provides the required information regarding downtime during the  $3^{rd}$  and  $4^{th}$  quarters of 2014 of each monitoring instrument or equipment pursuant to CD Paragraphs 18 - 20 and 22 - 23.

Table 4-1
Cracking Plant Flare Monitoring Instrument/Equipment Downtime

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Vent Gas Flowmeter	0.0	0.00	0.0	0.00
Steam Flowmeter	0.0	0.00	0.0	0.00
Vent Gas Pressure Transmitter	0.0	0.00	0.0	0.00
Vent Gas Temperature Transmitter	0.0	0.00	0.0	0.00
Steam Pressure Transmitter	0.0	0.00	0.0	0.00
Steam Temperature Transmitter	0.0	0.00	0.0	0.00
Met Station	0.0	0.00	0.0	0.00
GC	6.5	0.30	3.0	0.13

Table 4-2
Crude Flare Monitoring Instrument/Equipment Downtime

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Vent Gas Flowmeter	0.0	0.00	0.0	0.00
Steam Flowmeter	0.0	0.00	0.0	0.00
Vent Gas Pressure Transmitter	0.0	0.00	0.0	0.00
Vent Gas Temperature Transmitter	0.0	0.00	0.0	0.00
Steam Pressure Transmitter	0.0	0.00	0.0	0.00
Steam Temperature Transmitter	0.0	0.00	0.0	0.00
GC	62.9	2.85	38.9	1.76

Table 4-3
Unifiner Flare Monitoring Instrument/Equipment Downtime

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Vent Gas Flowmeter	0.0	0.00	0.0	0.00
Steam Flowmeter	0.0	0.00	0.0	0.00
Vent Gas Pressure Transmitter	0.0	0.00	0.0	0.00
Vent Gas Temperature Transmitter	0.0	0.00	0.0	0.00

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Steam Pressure Transmitter	0.0	0.00	0.0	0.00
Steam Temperature Transmitter	0.0	0.00	0.0	0.00
GC	11.2	0.51	2.2	0.10

Table 4-4
Alkylation Flare Monitoring Instrument/Equipment Downtime

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Vent Gas Flowmeter	0.0	0.00	0.0	0.00
Steam Flowmeter	0.0	0.00	0.0	0.00
Vent Gas Pressure Transmitter	0.0	0.00	0.0	0.00
Vent Gas Temperature Transmitter	0.0	0.00	0.0	0.00
Steam Pressure Transmitter	0.0	0.00	0.0	0.00
Steam Temperature Transmitter	0.0	0.00	0.0	0.00
GC	17.8	0.81	15.3	0.69

Table 4-5
Coker Flare Monitoring Instrument/Equipment Downtime

Instrument/ Equipment	3 <sup>rd</sup> Quarter Downtime Hours	3 <sup>rd</sup> Quarter Downtime Hours as a % of Operating Hours	4 <sup>th</sup> Quarter Downtime Hours	4 <sup>th</sup> Quarter Downtime Hours as a % of Operating Hours
Vent Gas Flowmeter	0.0	0.00	0.0	0.00
Steam Flowmeter	0.0	0.00	0.0	0.00
Vent Gas Pressure Transmitter	0.0	0.00	0.0	0.00
Vent Gas Temperature Transmitter	0.0	0.00	0.0	0.00
Steam Pressure Transmitter	0.0	0.00	0.0	0.00
Steam Temperature Transmitter	0.0	0.00	0.0	0.00
GC	3.5	0.16	48.0	2.17

In accordance with the requirements of CD Subparagraph 70.b, Table 4-6 provides the required information regarding monitoring instrument/equipment downtime for instruments or equipment that exceed 110 hours of downtime per calendar quarter.

Table 4-6

Monitoring Instrument/Equipment Downtime for > 110 Hours of Downtime in

Calendar Quarter

Instrument/ Equipment	Date	Start Time	Duration (hours)	Cause	Corrective Action
N/A	N/A	N/A	N/A	N/A	N/A

### 4.2 Automatic Control System Override

In accordance with the requirements of CD Subparagraph 70.c, Table 4-7 and Table 4-8 provide the required information regarding the override of the steam and supplemental gas ACS respectively, required in CD Paragraph 43 during the 3rd and 4th quarters of 2014:

Table 4-7
Override of Automatic Steam Control System

Flare	3 <sup>rd</sup> Quarter Overridden Hours	3 <sup>rd</sup> Quarter Overridden Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Overridden Hours	4 <sup>th</sup> Quarter Overridden Hours as a % of Flare Operating Hours
Cracking Plant	12.6	0.57	21.0	0.95
Crude	198.0	8.97	52.4	2.37
Unifiner	290.6	13.16	12.5	0.57
Alkylation	45.6	2.07	7.1	0.32
Coker	84.6	3.83	34.6	1.57

Table 4-8
Override of Automatic Supplemental Gas Control System

Flare	3 <sup>rd</sup> Quarter Overridden Hours	3 <sup>rd</sup> Quarter Overridden Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Overridden Hours	4 <sup>th</sup> Quarter Overridden Hours as a % of Flare Operating Hours
Cracking Plant	0.5	0.02	27.5	1.24
Crude	139.0	6.30	52.4	2.37
Unifiner	2.8	0.13	11.4	0.52
Alkylation	18.5	0.84	6.0	0.27
Coker	10.1	0.46	12.3	0.56

A list of reasons for the override of each flare over 110 hours per calendar quarter is as follows:

Table 4-9
Additional Information for Override of Automatic Control System

Flare	Date	Steam ACS Override Hours	Supplemental Gas ACS Override Hours	Reason for the Override	Corrective Action(s) Taken	
	7/7/2014	43.7				
	7/15/2014	15.7		Erratic vent gas		
	7/16/2014	22.0		flow readings		
	7/22/2014	188.6		caused by vent	Steam and/or supplemental natural	
	8/2/2014	4.5		gas flow meter	gas was placed in manual to prevent	
Unifiner	8/4/2014	1.4		malfunction.	over-steaming or visible emissions.	
	8/5/2014	1.1	<b></b>	Spikes in flow cause over-	Automatic control was re-established	
	8/6/2014	0.3		steaming, while	when flow meter returned to a stable,	
	8/13/2014	4.6		dips in flow cause visible emissions.	accurate reading.	
	8/14/2014	3.0				
	8/23/2014	1.1				
	8/26/2014	2.5				
	7/8/2014	29.5	28.1	GC validation	Steam and/or supplemental natural	
	7/17/2014	12.2	12.3	failure and associated maintenance.	gas were placed in manual until GC was repaired.	
Crude	7/29/2014	55.0	3.1	Preventative Maintenance (PM) performed on Vent Gas and Steam flow meters and pressure transmitters.	Placed steam in manual to prevent visible emissions. Returned to normal following event.	
	8/3/2014 4.6 4.7					
	8/15/2014	23.7	17.9	GC validation	Steam and/or supplemental natural	
	9/3/2014	9.5	9.5	failure and associated	gas was placed in manual until GC	
	9/4/2014	7.0	7.0	maintenance.	was repaired.	
	9/8/2014	9.4	9.4			

Flare	Date	Steam ACS Override Hours	Supplemental Gas ACS Override Hours	Reason for the Override	Corrective Action(s) Taken
	9/9/2014	7.0	7.0		
	9/10/2014	2.6	2.6	GC validation	Steam and/an arreal arreated and and
Crude	9/11/2014	12.0	12.0	failure and	Steam and/or supplemental natural gas was placed in manual until GC
Crude	9/12/2014	6.8	6.8	associated	was repaired.
	9/13/2014	4.0	4.0	maintenance.	was repaired.
A. W.	9/17/2014	5.3	5.3		
	9/18/2014	4.7	4.7		
	9/29/2014	4.9	4.9		

### 4.3 Inapplicability of Emission Standards

In accordance with the requirements of CD Subparagraph 70.e, Table 4-9 provides the required information regarding the periods of time during which the requirements of CD Paragraphs 46-49 were inapplicable (ie, the only gases being vented were Purge Gas and/or Pilot Gas):

Table 4-10
Inapplicability of Emissions Standards

Flare		3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours		4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
Coker	189.5	8.58	1432.8	64.89

### 4.4 Exceedances of Emission Standards

In accordance with the requirements of CD Subparagraph 70.f, Table 4-11 through Table 4-14.b provides the required information regarding the exceedances of emissions standards in CD Paragraphs 46.b, 47.b, 48.c, and 49 during the 3rd and 4th quarters of 2014:

Table 4-11
Cracking Plant Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	0.0	0.00	10.0	0.45
S/VG Ratio	0.0	0.00	0.0	0.00
MFR	0.0	0.00	0.0	0.00
Combustion Efficiency	0.0	0.00	10.0	0.45

Table 4-12
Crude Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	13.8	0.62	4.3	0.19
S/VG Ratio	0.0	0.00	0.0	0.00
MFR	2.5	0.11	19.0	0.86
Combustion Efficiency	16.2	0.74	23.2	1.05

Table 4-13
Alkylation Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	70.3	3.18	1.8	0.08
S/VG Ratio	0.0	0.00	0.0	0.00

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
MFR	2.8	0.12	1.4	0.06
Combustion Efficiency	73.0	3.31	3.2	0.14

Table 4-14a

Raw Unifiner Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	4.8	0.22	2.8	0.12
S/VG Ratio	14.8	0.67	0.0	0.00
MFR	1.0	0.05	5.1	0.23
Combustion Efficiency	18.5	0.84	7.8	0.35

Table 4-14b
Corrected Unifiner Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	0.0	0.00	0.0	0.00
S/VG Ratio	0.0	0.00	0.0	0.00
MFR	0.0	0.00	0.0	0.00
Combustion Efficiency	0.0	0.00	0.0	0.00

Table 4-14a includes data from the Unifiner flare that has not been corrected, meaning that these values are taken directly from the tracking system without consideration for the malfunctioning equipment. Table 4-14b contains the data that MRD believes to be the most reflective of the performance on the system.

The Unifiner Flare Vent Gas Flow meter is experiencing spikes and dips in the flow rates. . The flow meter reads erratically, resulting in steam-to-vent gas control issues. The cause of the flow meter issues was originally believed to be caused by moisture in the flare system. However, MRD has performed troubleshooting, including repairing a steam leak in the system, that has indicated moisture is not the cause of the erratic readings. MRD has chosen to provide a more accurate assessment of the values in the "Corrected" table 4-13b.

MRD is working to pursue different flow meter configurations and options that are compliant with the requirements of CD Paragraph 19.

Table 4-15
Coker Flare Exceedances of Emissions Standards

Emission Standard	3 <sup>rd</sup> Quarter Hours	3 <sup>rd</sup> Quarter Hours as a % of Flare Operating Hours	4 <sup>th</sup> Quarter Hours	4 <sup>th</sup> Quarter Hours as a % of Flare Operating Hours
NHV of Combustion Zone 3 Hour Average	1.3	0.06	0.0	0.00
S/VG Ratio	0.0	0.00	0.5	0.02
MFR	16.8	0.76	0.5	0.02
Combustion Efficiency	18.0	0.82	1.0	0.05

### 4.5 Flaring Limitation Exceedances

In accordance with the requirements of CD Subparagraph 70.h, which references the flaring limitations found in CD Paragraphs 39 and 40, the limitations on flaring are not yet applicable to the Detroit Refinery. Following the date by which the refinery will be subject to the flaring limitations of CD Paragraphs 39 and 40, the appropriate Semi-Annual Report will contain the required information for exceedances of the flaring limitations.

### SECTION 5 ANNUAL EMISSIONS DATA

### CD Paragraph 71 - Emissions Data

In the semi-annual report that is submitted on July 31 of each year, the Detroit Refinery shall provide, for each flare, for the prior calendar year, the amount of emissions of the following compounds (in tons per year): VOCs, SO2, Hydrogen Sulfide (H2S), Carbon Dioxide (CO2), Methane, and Ethane. Since this is not a mid-year submittal, emissions data are not required to be reported.